



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,625	08/30/2001	Terence Sean Sullivan	V0077/7140WRM	9283

7590 09/22/2004  
Gary L. Loser  
Varian Semiconductor Equipment Associates, Inc.  
35 Dory Road  
Gloucester, MA 01930

EXAMINER
----------

NGUYEN, KIET TUAN

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/943,625	<b>Applicant(s)</b> SULLIVAN ET AL.	
	<b>Examiner</b> Kiet T. Nguyen	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5-8,11-14,17-22,25-33,35-37 and 68-71 is/are allowed.
- 6) ☒ Claim(s) 2-4,9,10,15,16,23,24,34,38-67 and 72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20040916</u> . | 6) <input type="checkbox"/> Other: ____  |

***Rejection Under 35 U.S.C. 112, Second Paragraph***

Claims 2-4, 9-10, 15-16, 23-24, 34, 38-67 and 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the maximum observed beam current" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 is indefinite for reciting the limitation "the variation ... iteration" in lines 1-2. What is the element that is greater than the control parameter in magnitude?

Claim 10 recites the limitation "the maximum observed beam current" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the approximate entry angle" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the approximate entry velocity" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the extreme members" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "said control parameter readback" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the peak observed beam current" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2881

Claim 34 recites the limitation "the waveform" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 38 recites the limitation "said power supply output" in lines 9-10. There is insufficient antecedent basis for this limitation in the claim.

Claim 38 recites the limitation "the extreme members" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 38 recites the limitation "the peak observed beam current" in line 14. There is insufficient antecedent basis for this limitation in the claim.

Claim 39 is indefinite for reciting the limitation "the variation ... iteration" in lines 1-2. What is the element that is greater than the control parameter in magnitude?

Claim 40 recites the limitation "the maximum observed beam current" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 49 recites the limitation "the step of evaluating said target parameter" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 49 recites the limitation "the waveform" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 53 recites the limitation "the approximate position" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 53 recites the limitation "said nominal control parameter" in lines 9-10. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2881

Claim 54 recites the limitation "said beam current sensing means" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 55 recites the limitation "the maximum observed beam current" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 56 recites the limitation "said target component" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 57 is indefinite for reciting the limitation "the variation ... iteration" in lines 1-2. What is the element that is greater than the control parameter in magnitude?

Claim 58 recites the limitation "the maximum observed beam current" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 58 recites the limitation "said optimal readback value" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 58 recites the limitation "said nominal readback value" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 72 recites the limitation "said power supply interfaces" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 72 recites the limitation "the selected power supply controller" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 72 provides for the use of a method, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where

Art Unit: 2881

it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 72 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 1, 5-8, 11-14, 17-22, 25-33, 35-37 and 68-71 are allowed.

Claims 38-67 and 72 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 2-4, 9-10, 15-16, 23-24 and 34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

**Reasons for indicating allowable subject matter**

The prior art fails to disclose a method and/or apparatus for evaluating the tuning of a target parameter of a target component in a charged particle beam system, which includes the limitations as recited in part c) of claims 1 and 68-69; part e) of claim 38; part e) of claim 53; a tuning algorithm of a localized controller for automatically tuning a selected one of beamline components in response to a

Art Unit: 2881

tune command from a centralized controller as recited in claims 70 and 72; or part d) of claim 71.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Huang et al. disclose a method of tuning electrostatic quadrupole electrodes of an ion beam implanter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet T. Nguyen whose telephone number is 571-272-2479. The examiner can normally be reached on Monday-Friday from 8.00 AM to 6.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee, can be reached on Monday-Friday. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2881

A handwritten signature in black ink, appearing to read 'Kiet T. Nguyen', with a horizontal line underneath.

KIET T. NGUYEN  
PRIMARY EXAMINER